City of Austin MEMO

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June 10, 2003

To: Mayor and Council Members
From: Stephen L. Morgan, City Auditor
Subject: RDMT Implementation Audit

I am pleased to present this report on implementation of the RDMT project, which includes a combined transportation and emergency communications center and several related information systems being implemented by a coalition of entities in the Austin region.

This report is the first in a series of three scheduled on our 2003 service plan relating to implementation of the RDMT project. This first audit focuses on the completion of construction of the combined facility and the installation of basic infrastructure in the facility.

Through our audit work we noted that the combined facility is substantially complete and projects are within approved budgets and schedules. Although some delays were experienced during construction of the facility, these delays have been managed such that upcoming dates for infrastructure installation have not been affected. We also noted that strong project management and risk management are in place.

We appreciate the cooperation of RDMT project staff during this audit.

Stephen L. Morgan, CIA, CGAP, CFE, CGFM
City Auditor

Report on RDMT Implementation

Completion of Construction and Initial Elements of the
Combined Transportation and Emergency Communications Center (CTECC)

Office of the City Auditor June 10, 2003

The City Council approved the Office of the City Auditor's CY 2003 Annual Performance Plan which included an audit of implementation of the RDMT project.

Summary

The City of Austin, in conjunction with several regional partners, is in the implementation stage of a joint emergency communications project, called the Radio Dispatch and Mobile Trunking (RDMT) project. This project includes construction of a Combined Transportation and Emergency Communications Center (CTECC), an upgrade of the Computer Aided Dispatch (CAD) system, and replacement of the radio network and radio equipment.

This report is the first in a series on implementation of the RDMT systems (primarily CTECC, CAD, and Radio). The purpose of our audit is to provide assurance that this $123 million project is being completed on time and within budget and will ultimately deliver expected functionality. This first audit focuses on the completion of construction of the CTECC facility and the installation of basic infrastructure in the facility.

We noted that strong project management and risk management are in place and projects are within approved budgets and schedules. We also noted that construction of the CTECC facility has experienced some delays, but these delays have been managed such that upcoming dates for infrastructure installation have not been affected.

Objectives, Scope, and Methodologies

Objective:
Determine whether the construction completion and installation of initial elements for the CTECC component of the RDMT project are being completed as scheduled/on-time.

Scope:
During the preliminary phase of this audit, we focused on three areas:

1. RDMT project budgets and a history of budget changes,
2. RDMT project schedules and a history of schedule changes, and
3. Promised functionality for RDMT projects.

Based on the results of our preliminary work and the timing of project components, we chose to focus our first testing on completion of the CTECC facility and installation of basic infrastructure in the facility. Our audit included review of documents and information from the inception of the RDMT project, FY 96, to the present.

Methodologies:
Methodologies for this portion of fieldwork included:

- Review of project documentation and reports to Council
- Physical observations of installed and connected elements at CTECC
- Comparison of observations to project documentation
- Interviews with RDMT/CTECC staff
- Review of data from City financial and project management systems

This audit was conducted in accordance with generally accepted government audit standards.

Background

In the early 1990's, public safety officials and planners in the greater Austin area responded to new Federal Communication Commission (FCC) rules for voice radio equipment by creating a regional coalition called the 911/RDMT Coalition. Coalition members shared many of the same operational issues such as delivering public safety services across multiple jurisdictions. Members envisioned a state-of-the-art emergency communications system that would provide an integrated public safety telecommunications system and ensure unified voice and data response to emergencies within the Austin/Travis County region. Coalition members are shown in Figure 1.

Coalition members decided to eliminate duplication of efforts and improve public safety service delivery by enhancing the ability to share voice and data communications. Policy makers determined that construction of a single, shared facility would meet operational needs, facilitate exchange of information, coordinate response to incidents, and improve resource management.

The RDMT project includes several public safety initiatives, described below:

- **CAD -** Computer Aided Dispatch System: A dispatch system that will improve the call taker and dispatcher's ability to provide information directly to units on the street using mapping, addressing, and messaging features.
- **RRS** - Regional Radio System: A new radio communications network which includes construction of radio infrastructure (e.g. towers), installation of radio interface equipment, and purchase of radios.
- **RMS** - Records Management Systems for Police, Fire, and Emergency Medical Services: Implementation of two new records management systems that automate manual processes and improve the timeliness and accessibility of records.
- **CTECC** - Combined Transportation and Emergency Communications Center: Construction of a regional emergency communication and transportation management center for the Austin area that includes incorporation of emergency- and transportation-related information systems into the facility.

In addition to the RDMT project initiatives, other related systems that will be housed in the CTECC facility are the 911 and 311 call distribution systems. Also housed in CTECC but not directly impacting RDMT functions are the Texas Department of Transportation's (TxDOT) advanced traffic management system, Capital Metro's fixed route management system, and a link to the City's Signals Division traffic management system.

Figure 1: Entities participating in All or Part of the RDMT Project

City of Austin - CAD, RRS, RMS, CTECC
Travis County - CAD, RRS, CTECC
TxDOT - CAD, RRS, CTECC
Capital Metro - RRS, CTECC
Austin Independent School District - RRS
City of Pflugerville - RRS
Texas House of Representatives - RRS
Texas Legislative Council - RRS
The University of Texas -RRS

SOURCE: RDMT Project Documentation

The RDMT project is a $123 million project, with an expected go-live date of October 12, 2003. The RDMT project is being managed following the phases of the information technology life cycle:

Phase I—Planning includes a comprehensive needs assessment to determine the current conditions of public safety systems and the individual and collective needs of participants. It includes definition of problems and solutions, scope, system and software requirements, resource needs, and development of a project plan.

Phase II—Acquisition includes developing requests for proposals, evaluating proposals, selecting a vendor, and negotiating the contract.

Phase III—Implementation involves management of contracts, installation of software, definition of rules and processes, data conversion and testing, dissemination of technical documentation and training, and putting the system into production or "going-live." For the RDMT project, phase III includes completion of the CTECC building and the incorporation of related information systems into the facility.

Phase IV—Post-implementation evaluation involves closing out the project and determining whether the system fulfills the needs and requirements as anticipated.

At this time, the planning and acquisition phases of RDMT are complete. The project is now in phase III, implementation.

Audit Results

Although our fieldwork focused on completion of the CTECC facility, our preliminary work indicated that strong project management and risk management are in place and projects are within approved budgets and schedules. We also noted that construction of the CTECC facility has experienced some delays, but these delays have been managed such that upcoming project milestones have not been affected.

The RDMT team is adhering to the latest approved budgets and schedules. Although our fieldwork focused on completion of the CTECC facility, we were able to determine that all RDMT projects are on schedule and on budget as approved by Council. We noted that budget, expenditures, and changes to budgets and expenditures have been reviewed, reported, and approved through appropriate channels. Each project is within its approved budget and has enough funds remaining for completion. We were able to verify financial reporting both in the City's online project management system and the City's financial system of record. Figure 2 below shows budgets and expenditures for each RDMT project.

Figure 2: Project Financial Information

Project	Budgeted (as amended)	Expended or Encumbered	Balance	% Rem.
CTECC	$38,452,376	$33,578,657	$4,873,719	12.7%
CAD	$12,009,996	$8,681,609	$3,328,387	27.7%
Radio	$62,005,107	$53,180,862	$8,824,245	14.2%
RMS	$4,769,374	$4,569,483	$199,891	4.2%
Mobile Data	$5,865,000	$1,883,339	$3,981,661	67.9%
	$123,101,853	**$101,893,950**	**$21,207,903**	**17.2%**

SOURCE: City financial and project management systems, as of May 5, 2003.

The RDMT team has also documented and continuously monitored project schedules and has obtained approval for all changes. At this time, there have been no substantive delays to the projects.

Strong risk management is in place for RDMT projects. RDMT project managers are expected to identify and mitigate risks on a continual basis. We found that RDMT project management has an ongoing process for identifying and addressing project risks. For example, the late date of the 911 system installation was identified as a risk by the project team and negotiated to an earlier date. At this time, the 911 equipment has been delivered and the RDMT team continues to monitor the project to mitigate risk. Another example of risk management is the acquisition and construction of radio tower sites. Early in the project, land acquisition for towers, either through lease agreements or purchase of land, was identified as a high risk. The project team monitored the risks associated with land acquisition continuously, and ultimately land was acquired and towers constructed for all sites. Review of test results indicates that towers are providing the desired coverage.

Although the CTECC project experienced some construction delays, these delays have not affected RDMT milestones. Construction should be completed according to contract specifications and the project schedule. Critical elements of CTECC building construction, which enable the installation of other systems to proceed, have been completed. Commissioning of the building, which entails detailed walk-throughs by an independent reviewer, is underway. However, ultimate completion of construction is signaled by a final certificate of occupancy which was scheduled to be obtained by March 30th and has not been obtained. Although this final sign-off must be obtained, its absence to date has not impacted the progress of other RDMT projects.

Minor delays in the construction schedule have not affected the overall RDMT schedule or upcoming milestone dates. The contractor and project management team mitigated the impact of construction delays caused by weather impediments and contract modifications by prioritizing elements critical for moving forward with other project components and by working extended hours when weather was clear.

Installation of basic infrastructure in the facility is underway. The nature of the RDMT project means that in addition to construction of the CTECC facility, installation of building networks, systems, and the transition and go-live of other RDMT initiatives are all part of the CTECC project. Installation of basic infrastructure such as servers, networks, furniture, computers, and other equipment is guided by contract specifications and the project schedule. Having these elements in place supports the installation of information systems in the CTECC facility.

At the time of our testing, we noted that delivery and installation for all furniture and equipment for the operations floor was complete. We also

observed that not all furniture and equipment had been delivered and installed in non-operation floor areas per the project schedule. Staff amenities were in place, some workstations and furniture had been installed, and workers were in the process of installing the phone system. However, other furniture and equipment that should have been in place by the time of our visit were not. This constitutes only a minor delay, due in part to the focus on first installing operations floor furniture and equipment followed by non-operations floor furniture and equipment. Subsequent testing indicated that all furniture and equipment had been delivered and most had been installed in appropriate locations.

Construction of the radio building is complete and security systems have been installed. Supporting infrastructure for radio, such as equipment racks, is in place and secured. Also, user elements such as the consoles at dispatcher workstations have been installed. In fact, these elements were installed earlier than projected in the project schedule.

During testing we noted that key elements of the CTECC network were installed and being tested. These elements include the satellites and antennas for CTECC systems, the server for CAD, the administrative server for monitoring and trouble-shooting CTECC computer operations, and the enterprise network, which links computers both within and outside of the CTECC facility.

Plans for Future Work

Through our work to date, we have identified some areas for further study. We will coordinate with the RDMT team to conduct additional work in areas identified.

The RDMT project is now moving into the part of the project where RDMT systems such as CAD, RRS, and RMS are incorporated into the CTECC facility, which involves extensive testing. We will observe and verify testing of RDMT systems.

Since many public entities are currently experiencing budget shortfalls, some concerns have been voiced regarding future funding for maintenance and operation of RDMT systems. Another area for further study may be determining whether adequate funding for maintenance and operation is planned and available from all partners following project go-live.

Management Response

I concur with the audit report findings and feel it's a reflection of a positive team effort between the Project Office and the Auditor's Office.

Peter Collins
Acting CIO

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